APPENDIX 30

James River Allocations Based on Chlorophyll *a* Criteria Attainment
Summary of May 27, 2009 Conference Call

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Issue: Applying the existing criteria assessment methodology, not all the tidal James River segments achieve the spring chlorophyll a criteria under E3 scenario conditions.

Possible Options (in no specific order or preference—strictly a list to work from):

1) Revisit/confirm application of the correct criteria assessment procedures;
   - Confirm we are correctly transforming the monitoring data by model output;
   - Re-evaluate the base criteria assessment procedures;
   - Re-evaluate the reference curve;
   - Address concerns about only 3 values making up the assessment curve.
2) More closely evaluate the Bay water quality/sediment transport model calibration for the tidal James River;
3) Revisit the James River chlorophyll a criteria.

Gameplan:
The following sequence of next steps were proposed and discussed during the conference call building from the above original set of options. CBPO staff will work through each step and move onto the next if the original issue can be resolved.

1) Revisit the 2005-2006 scenario results that met the draft James River chlorophyll a criteria

- Are there really different results coming out of the two respective versions of the Bay water quality model?
- What were the loads and how were those loads distributed that results in attainment back in 2005/2006 compared to now?
- Look into why CBPO used 25.7 million pounds of TN vs. 26.4 million pounds of TN listed in the 2003 Tayloe Murphy memo in running the 2003 cap scenario
- Look into P vs. N limitation in the tidal James

2) Closely evaluate the Bay water quality/sediment transport model calibration for the tidal James River

- Compare the 2009 Bay WQ/ST model vs. the 2003 Bay WQ model calibrations

3) Revisit the criteria assessment procedures and confirm we are applying procedures fully consistent with Virginia's water quality standards regulations

- Conduct a cross walk of the 2009 vs. 2003 criteria assessment procedures using Bay water quality model output focusing on what the differences between the

procedures may have lead to difference in attainment levels: use a bioreference curve vs. the 10% default curve, 10 years vs. 3 years, data transformation, etc.
- Evaluate the base criteria assessment procedures and assumptions
- Confirm the monitoring data transformed by model output steps very carefully
- Quality assurance all the criteria assessment procedure computer programming
- Review the underlying CFD plots
- Apply the prior bioreference and 10% default reference curves to see how of a difference that would make in terms of criteria attainment
- Evaluate the impact of only 3 points used to create the assessment curve

4) Revisit the development of a more appropriate biological reference curve given the advancement of the science during recent development/publication of the Bay numerical criteria

5) Re-look at the 1991-2000 hydrologic period of record for any unusual hydrologic events and whether there are any unique anomalies in the chlorophyll a record during 1991-2000.

6) Consider confidence interval around the assessment CFD curves given the collection of more spatially intensive chlorophyll a concentration data as part of the shallow-water monitoring program in the tidal James River.

7) Revisit the chlorophyll *a* criteria
- How would we apply the 2007 harmful algal bloom-based chlorophyll a criteria to the tidal James River.

Question still to be addressed: How do we select the correct three-year period for assessing criteria attainment for Bay TMDL purposes? (posed by Jim Pletl)

Next Steps:
CBPO staff will take the lead on the working through the above gameplan following Lewis Linker's well deserved vacation and the Modeling Team completes its work on the draft basinwide cap load targets for the June 22 Water Quality Steering Committee.

EPA will convene future conference calls as key findings emerge.

AR0037648